

On
Inaugural Dissertation

On
the Syphilitic Fever of Amelia City, Va
in the years of 1827 & 8

Published March 10

For 1829

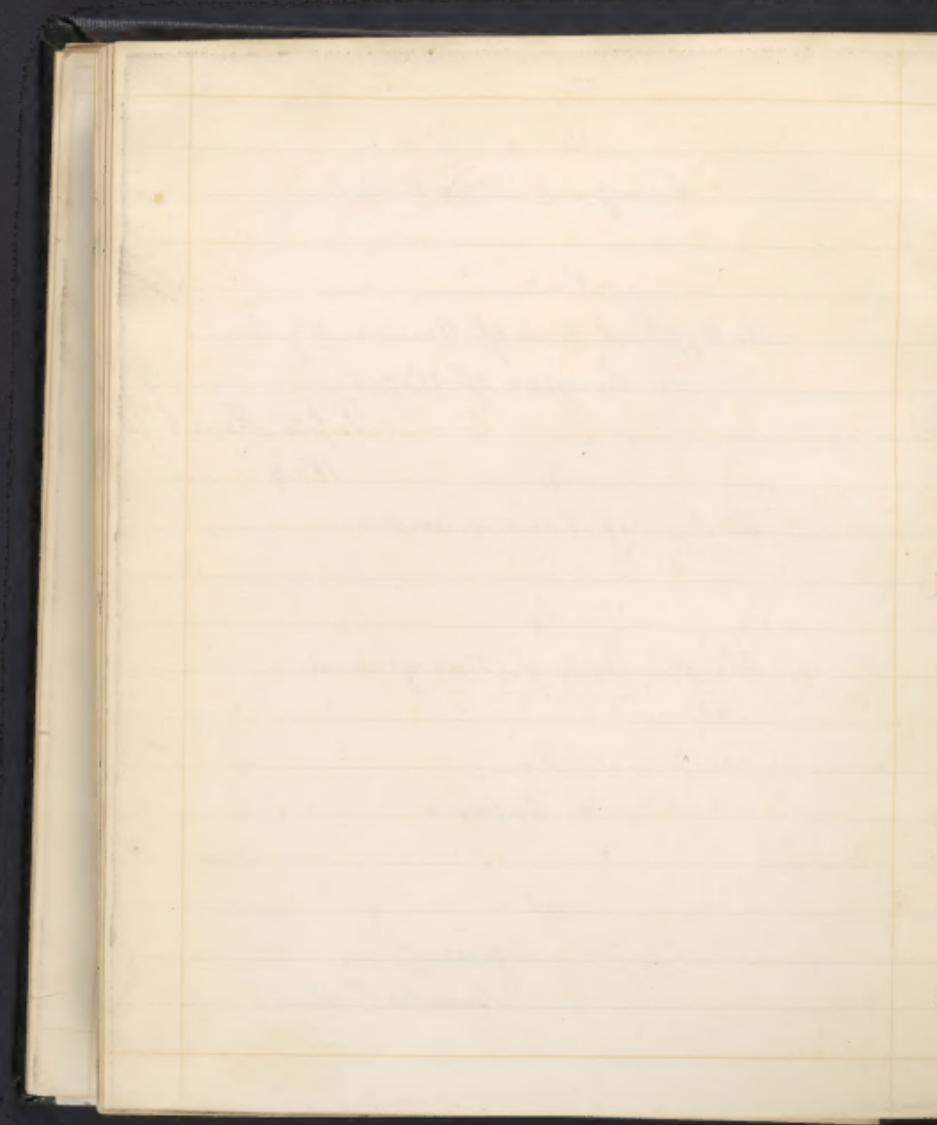
The degree of Doctor of medicine

In
The University of Pennsylvania

By
Peter H. Anderson

of
Virginia

November 1st 1828



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To

Nathaniel Chapman, M.D.

Professor of the Institutes and Practice of Medicine
and of Clinical Practice in the University
of Pennsylvania

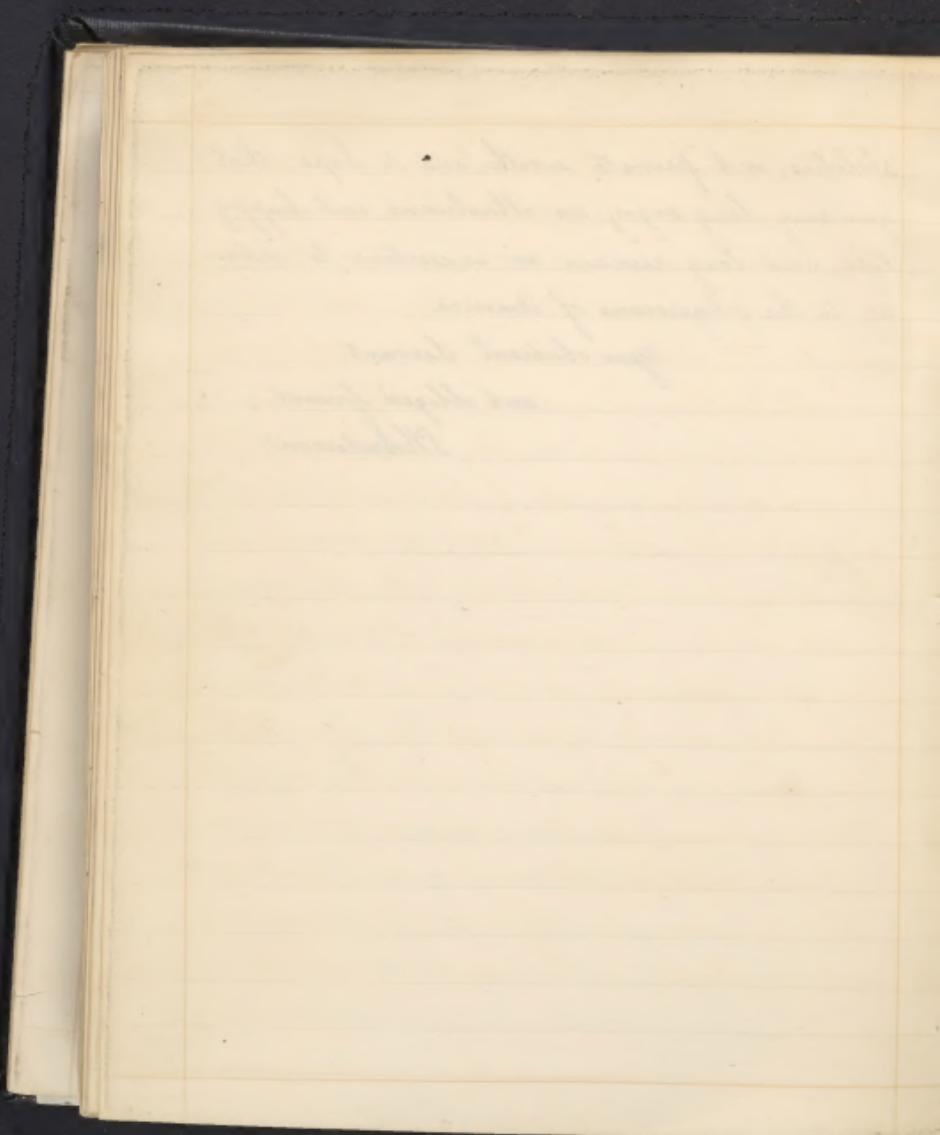
Dear Sir,

Deeply cherishing the sentiments of esteem awakened by your publick lectures; your friendly admonitions; exemplary conduct and persevering industry, I embrace, with eagerness, the opportunity offered, of rendering unto you, my warmest thanks. In your steady friendship towards me, since I have had the honour of being your private pupil; for the difficulties which you removed by your private instructions; for admiration of your talents, and esteem for your virtues, permit me to dedicate to you, the following sheets, as a small and grateful tribute, to your splendid

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abilities, and private worth, and to hope, that
you may long enjoy an illustrious and happy
life, and long remain an incentive to indu-
stry to the physicians of America.

Your obedient servant,
and obliged friend
R Henderson



To

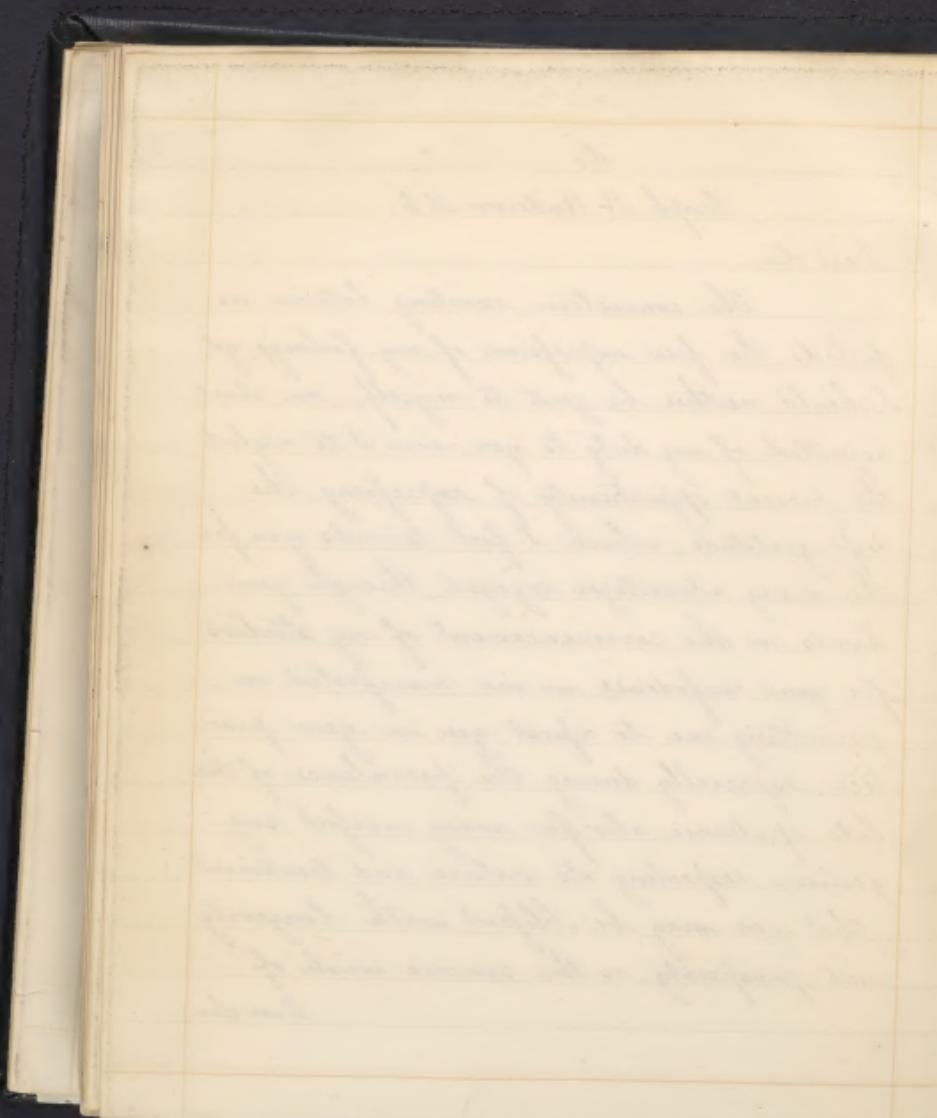
Joseph B. Anderson, M.D.

Dear Sir,

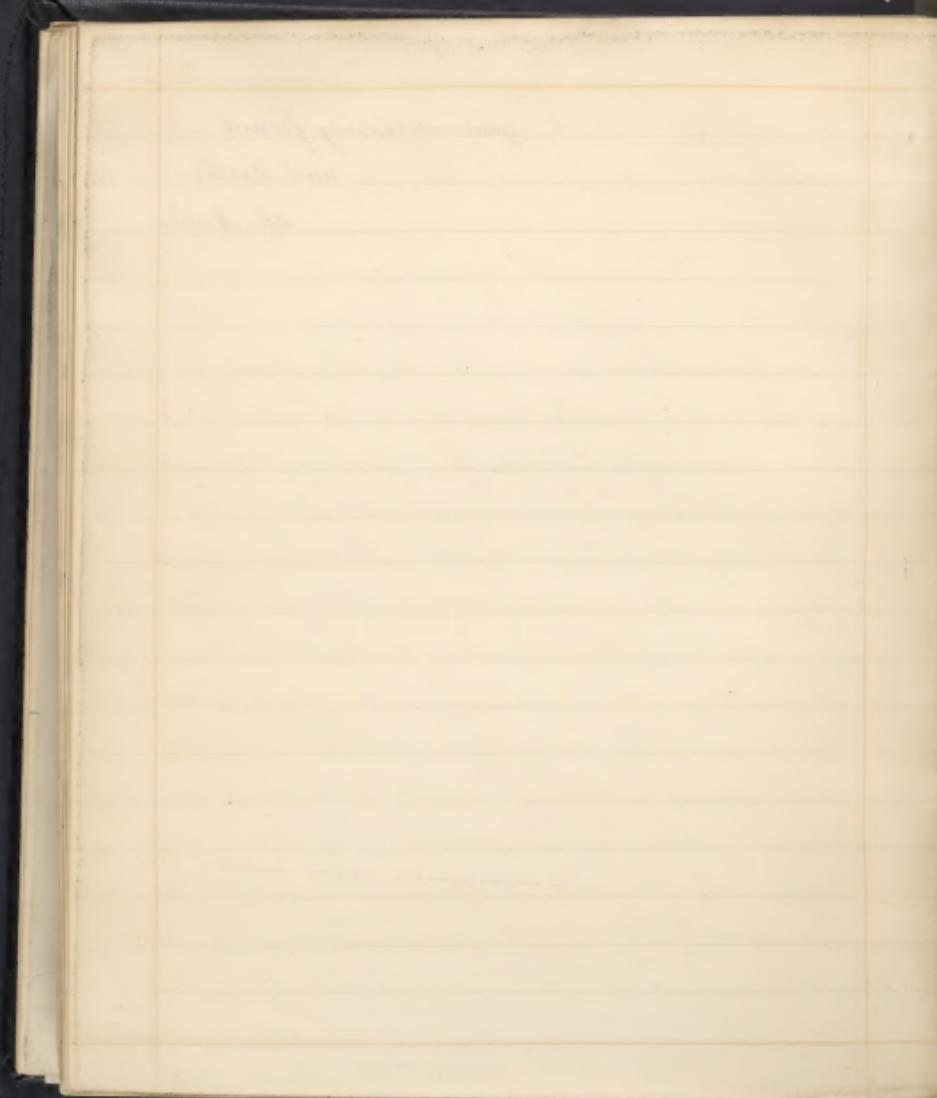
The connection existing between us, forbids the free expression of my feelings; yet, I should neither be just to myself, nor stand acquitted of my duty to you, were I to neglect the present opportunity of expressing the deep gratitude, which I feel towards you, for the many advantages enjoyed, through your hands, in the commencement of my studies; for your confidence in me, manifested in permitting me to assist you in your practice, especially during the prevalence of the late epidemic; also for many useful suggestions respecting its nature and treatment.

That you may be blessed with longevity, and prosperity, is the sincere wish of

Dear Sir



your unceasing friend,
and Brother
the Author



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Inaugural Dissertation
On the Epidemic Disease of Amelia City in
the years 1827 & 1828

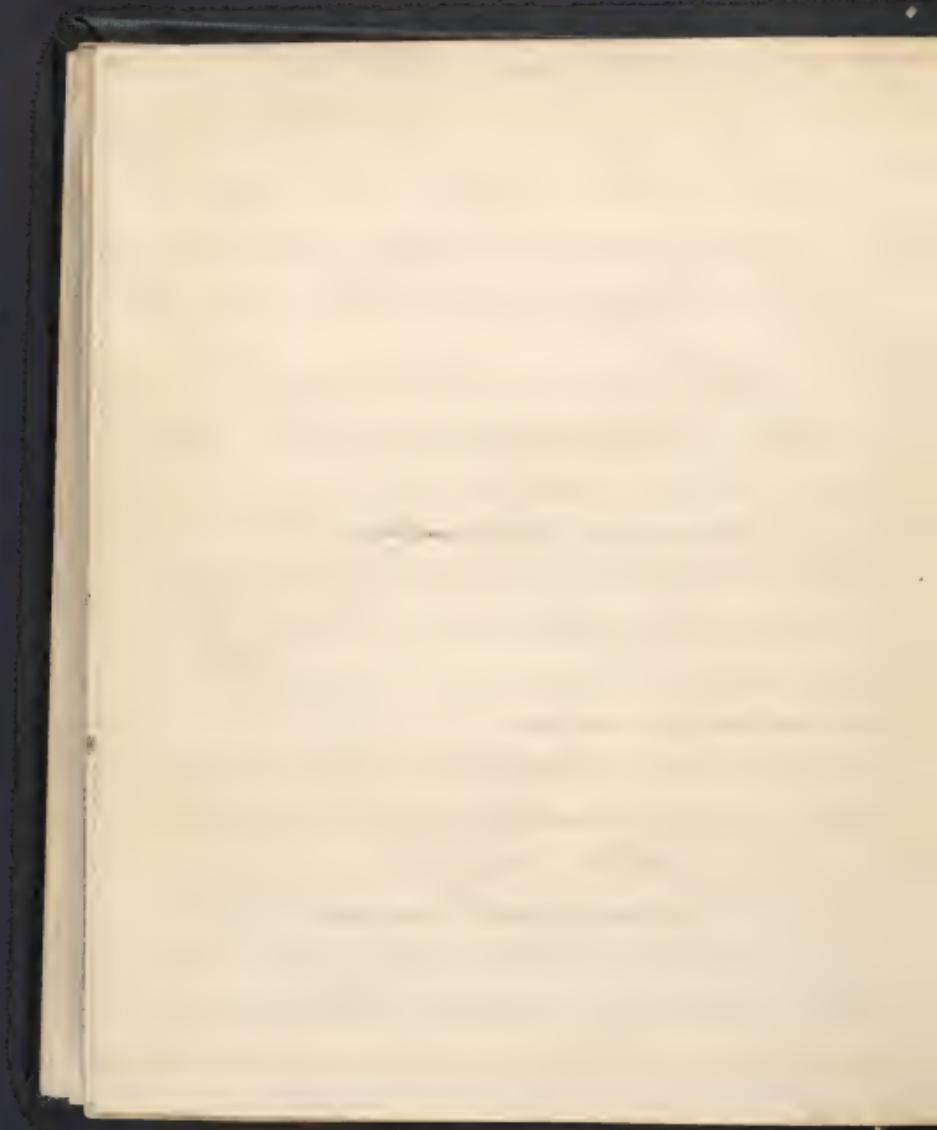
Previous to entering into the history of this disease, it is necessary to make a few remarks respecting the local situation of this County, the seasons, and state of health of the inhabitants, for some months prior to its commencement.

Amelia County throughout is hilly and intersected by numerous valleys and large swamps, through the center of which pass small currents, which at certain places spread to so considerable a width, as to convert large portions of them into marshes. In their natural state, they contain little, or no stagnant water, but have



a free outlet: hence the removal of the water before it becomes stagnant. It is followed, however, immediately by a fresh supply; thus keeping them constantly inundated.

With respect to the seasons and health of the inhabitants. The fall of 1896 was as healthy as usual for the season. There were a few cases of Inflammation of the Liver, which readily gave way on the approach of winter, and from that time, until the commencement of the fever under consideration, the inhabitants continued healthy. The winter had been very moderate, the spring was rather forward, remarkably calm, and reasonable throughout. Vegetation of every description advanced with unusual rapidity, until the 1st of June, when the weather became very dry and continued so,



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until 15th of July; when a violent gust, accompanied with immense torrents of rain, occurred. The quantity of rain, which fell, within the space of a few hours, is almost incredible. Streams of every description over flowed to an unusual extent. The strongest milldams being insufficient to withstand their violence, were rend asunder, and the most of the country was deluged. Many of the dams were unrepaired; and the ponds, which were saturated with water exposed to the rays of the sun, consequently, vegetable matter, which had been accumulating for several years was speedily decomposed.

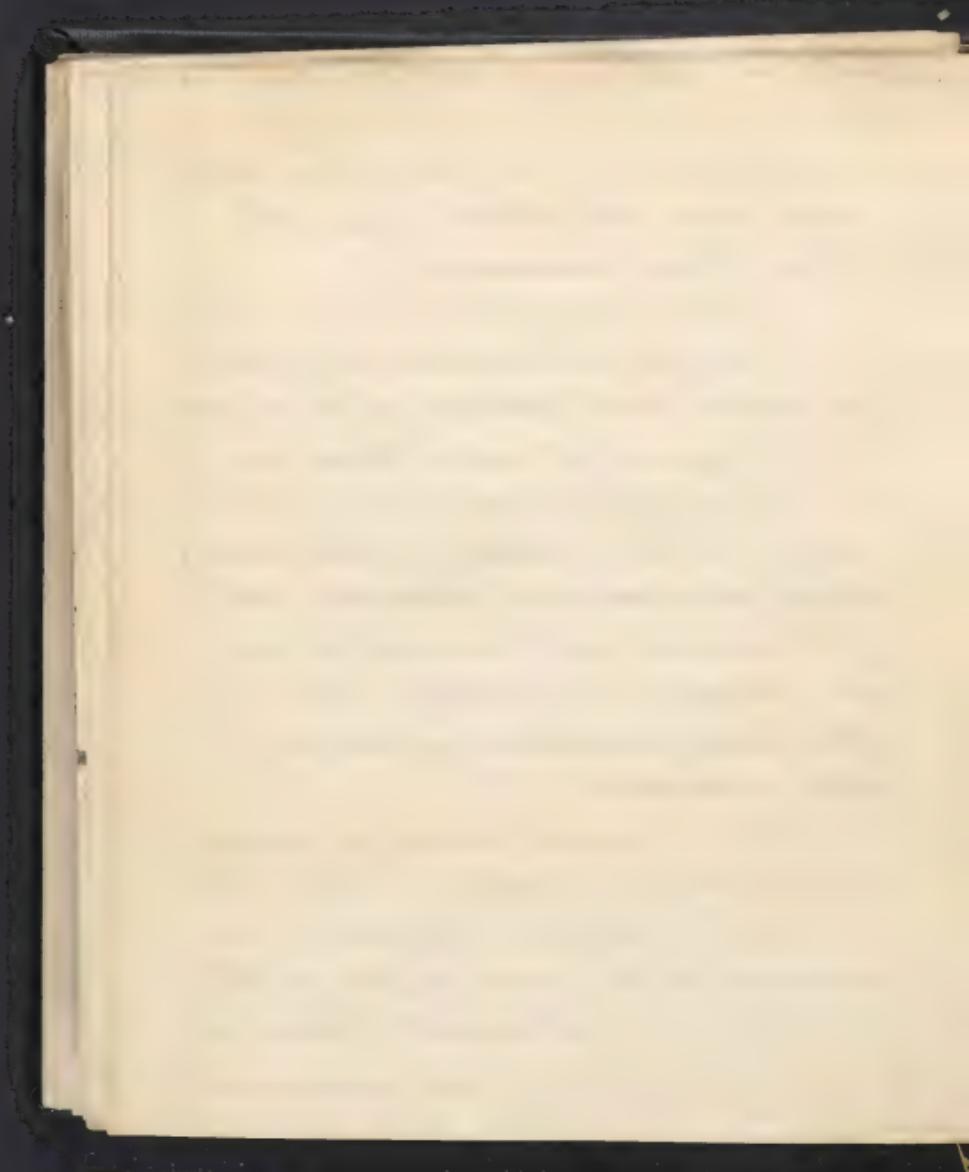
After the cessation of the storm, the weather was extremely warm. The Thermometer ranged between 95 and 98 de



grees of Fahrenheit. Not more than eight or ten days had elapsed, before the Typhoid Fever commenced.

By the 1st of August it had made rapid progress, and continued throughout the autumn with little or no abatement. On the approach of winter, though in some degree checked, yet, it was not arrested. In the beginning of the ensuing spring and summer, it broke out with great violence. At the close of summer, however, it gradually gave way, after having continued upwards of twelve months.

There was much diversity of opinion respecting its precise nature, as well as the best mode of treatment. By some it was pronounced to be genuine Typhus; by others to be of a nature intermediate between Ty-



nocha and synochus; they consequently called it syphoid. The latter opinion was adopted by our most intelligent practitioners. I have always believed with Dr Chapman, that genuine Typhus is the result of crowded & badly ventilated places.

The most remarkable feature of this disease, was its continuance through out winter. The prevalence of fevers in this County during the autumnal season, is exceedingly common. But no sooner does winter set in, than they cease.

Another feature, no less remarkable was the feeble effect of remedial agents, in arresting its progress, when fully formed.

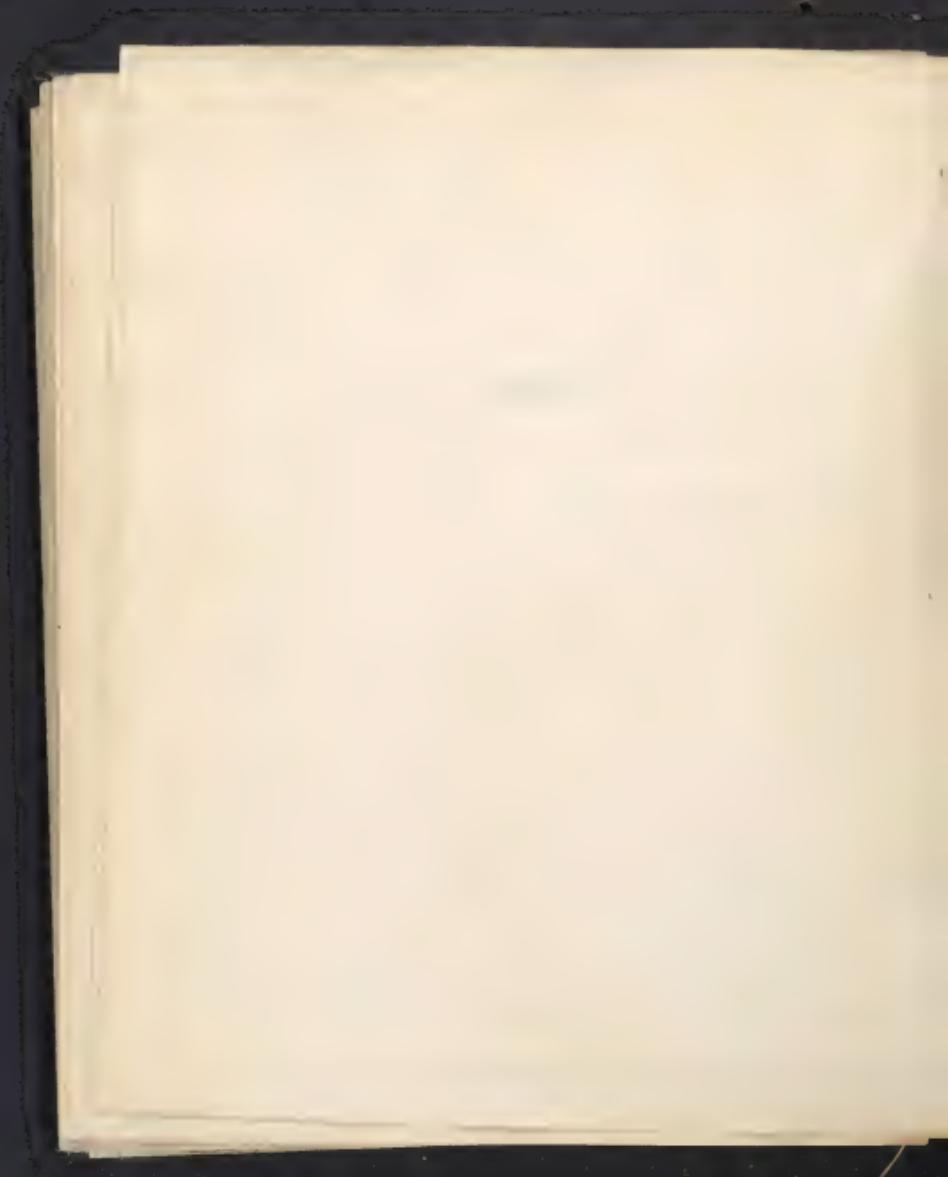
Although the disease was obstinate and tedious, very few cases proved fat-

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Sal. unless from neglect or mismanagement, under such circumstances its mortality was great.

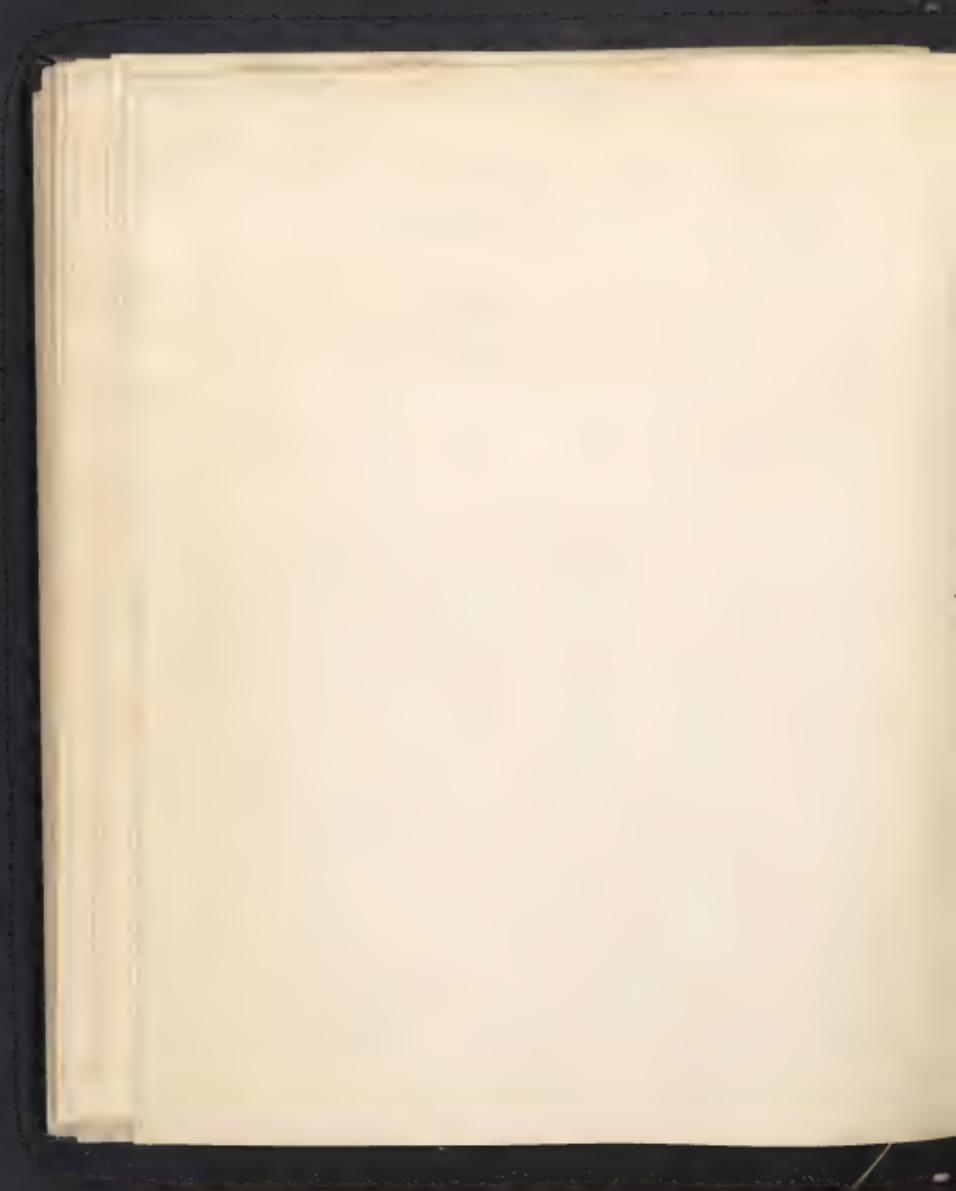
The disease was marked by three distinct stages, each of which, had its peculiar symptoms.

The first stage, commenced with nausea, and some degree of torpor, which was soon followed by languor, listlessness, and disinclination to motion; a palid face with contracted features, coldness of the surface, particularly of the extremities, a frequent, small, and incompressible pulse; a sense of fullness in the head, particularly about the frontal protuberances. These symptoms after continuing two or three hours, were followed by a chill, which was slight and of short dura-



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time; leaving the patient in a comfortable situation, so much so that he fancied himself well. Unlucky, however, appropriate remedies were used, a repetition of the chill, generally occurred about the seventh day, which rendered all his hopes delusive. During the interval, the patient remained in a state approaching so near the healthy, as to deceive an ordinary observer. The strength was little impaired, the spirits good, the sensations and excretions natural. But upon a minute investigation, the pulse was found more frequent and smaller than natural, the skin rather cold, the venous circulation languid, and a slight uneasiness was felt over the region of the liver, an' pressure evidently indicating that congestion was already forming. This stage continued ten or twelve



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days, before fever was fully developed.

^{2nd} stage. It was in this stage, that the true character of the disease was manifested. There was much gas trich desch. with frequent retchings accompanied with evictions of small quantities of thick bile, of a dark yellow colour, and frequently of a greenish cast; tenderness of the epigastrium on pressure, fullness in the region of the liver, a sense of internal heat, particularly of the stomach, a recession of blood from the surface, the pulse was small, frequent, and corded. At this time, some one of the abdominal viscera, most frequently the liver, was congested. The disease continuing longer, there were determinations

to the head, accompanied with delirium, and subultas tendinum. The tongue throughout this stage was dry, encrustated in the centre, and florid at the tip and edges. At other times it was entirely clear, and of a deep scarlet colour, with the papillæ considerably elevated. The eyes somewhat glassy and insensible to light. The vessels of the conjunctiva were injected. There was also contraction of the levator and depressor muscles of the lips, so as to present a grinning appearance. Frequently while the extremities were unusually cold, there was at the same time, inordinate heat of the whole body. Blood drawn at this period, was of a dark colour, and so thick as to escape but slowly from a large

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orifice. It speedily formed a firm coagulum, and readily separated into cragmantine and serum. The cragmantine contracted into a firm and small ball. I have seen blood drawn in vessels six or eight inches in diameter, in which was soon formed a coagulum not more than two or three inches in diameter; and of so firm a consistence, that it could easily be suspended on the end of a probe. its surface was covered with a buffy coat. The urine was scanty and high coloured. The alvine evacuations were thin and watery, and of a whitish appearance. This stage usually continued eight or ten weeks.

3rd stage. This stage was marked by great derangement of the brain;



delirium low and muttering; subsultus tendinum; great muscular weakness; deliquium animi when raised in the erect position; laborious respiration, attended with heaving of the shoulders, and impaired sensibility. The remedies administered produced no apparent effect. The application of snapes and blisters was not followed by cicoration. The discharges from the bowels were very solid and dark. The pulse was frequent small, and imperceptible. This stage seldom continued more than four or five days.

Causes. From what has been said respecting the seasons &c, it is evident that the disease was owing to the action of heat and moisture on vegetable matter. To render it more



evident. I will mention some striking examples.

Heat, though essential, was not alone, sufficient to produce it. Our hottest seasons, when dry, are healthy. Lind states that the dry season in Senegal, the hottest part of the year in that country, is healthy. In tropical countries, the hot and dry seasons are healthy; but soon after the rains commence, they become sickly. Lind speaking of Guinea says this as most tropical countries, has, properly speaking, only two seasons, the wet and the dry. The first is commonly of about four months' continuance, and is the season of sickness, whereas for many months in the dry season, most parts of this country are equally healthy and pleasant.



with any in the world. No sooner, however, do the rains set in, than the ravages of disease commence, and continue throughout the wet season, and afterwards, until the superabundant moisture be evaporated. As soon as this is effected, the health of the country is restored, except in those places, which continue wet throughout the year. Moisture then was also necessary to its production.

Heat and moisture, though both essential, were not sufficient to produce it. Many instances are mentioned of vessels in port, immediately on the commencement of disease among their crew putting out to sea with the effect of immediately arresting its progress. In the immense swamps



of the south before the forests are cut down, there is little or no sickness, even in the hottest weather and instances have often occurred of a fever being checked by the superabundance of moisture.

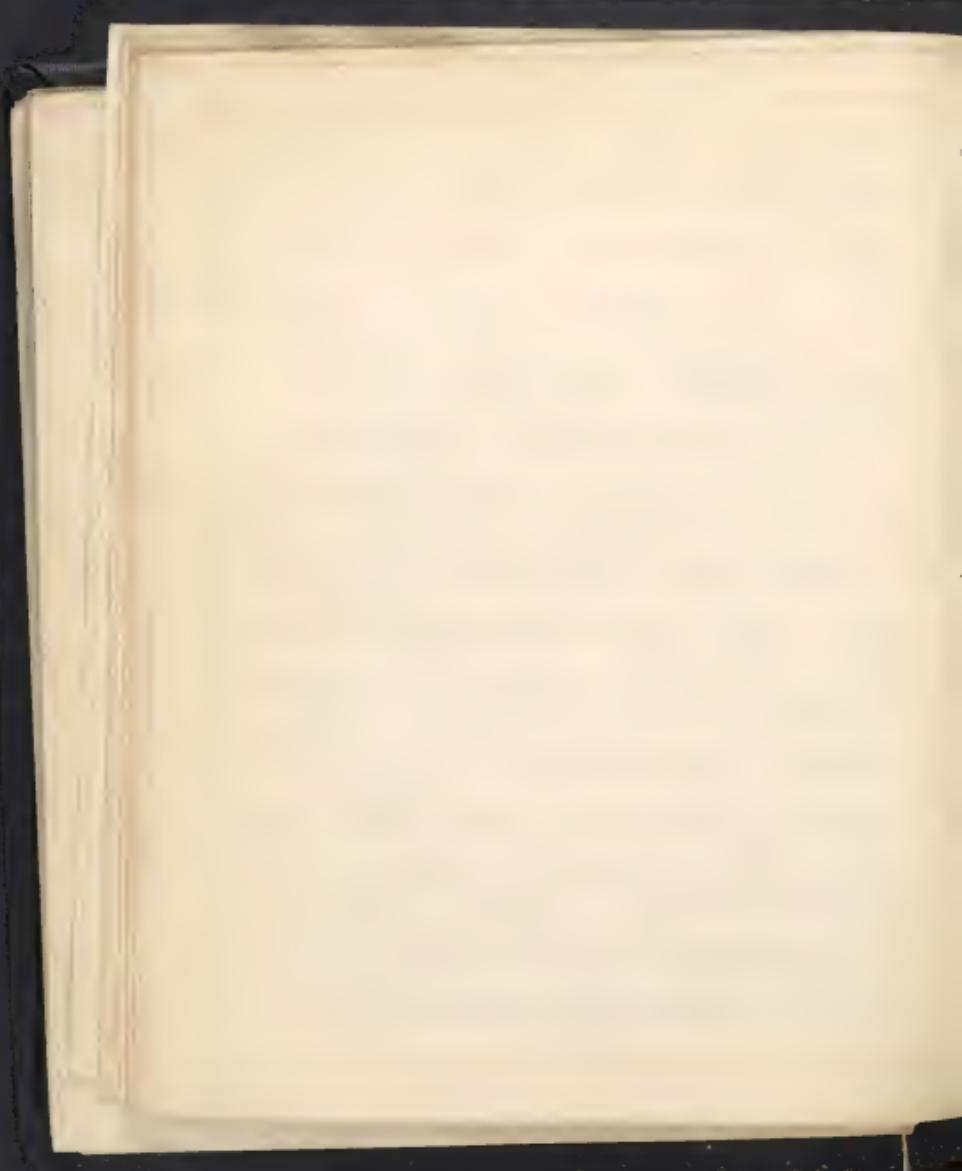
Thus, a bilious fever was arrested in Brabant by inundating a neighbouring marsh; and Sir John Ragle tells us, that the inhabitants of Bresta adopted the same expedient with success. For before rains have produced the same effect. Something more than heat and moisture, then was necessary. This additional circumstance is easily discovered, by bearing in mind the immediate appearance of the disease, after the storm, the condition of the drained millponds, and the heat of the weather, immediately succeeding.

On the other hand places formerly unhealthy on account of a neighbouring marsh, have been rendered healthy by draining it. Without entering into any lengthened detail, I will relate a circumstance, which fell under my own observation and goes far to prove the correctness of the above proposition. Mr. G., a respectable farmer, residing in the western part of Amelia County, for several years had scarcely known disease in his family. His house was situated on an elevated spot, where the air had always been pure and refreshing. There was no stream of magnitude within less than four or five miles of his residence. There was, however, a large swamp extending



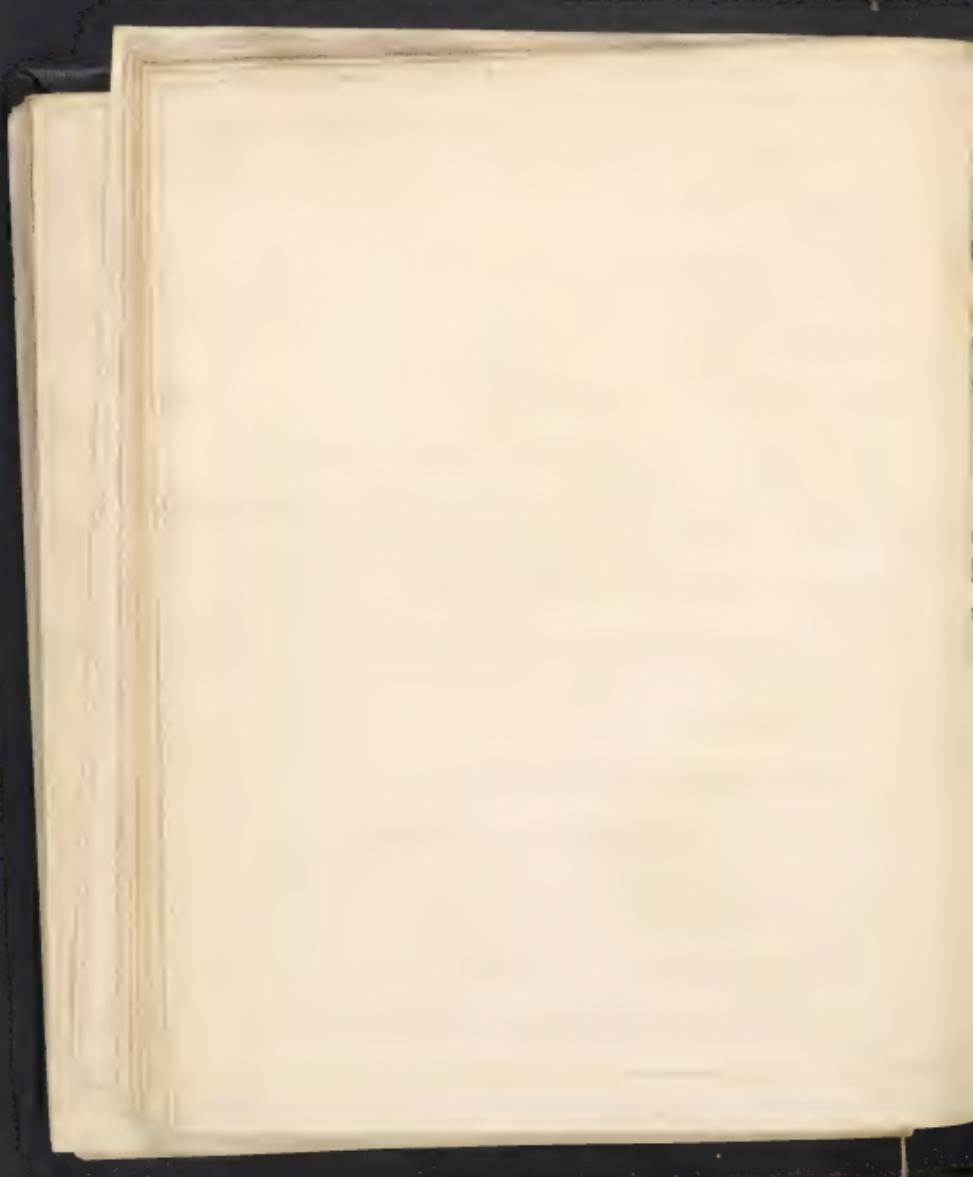
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through his plantation, having a course
ent in the middle passing by the foot
of the hill on which his house stood,
at which place it was unusually wide
and formed one of those marshes which
are so common to the south. The wa-
ter however, was not stagnant. In the
fall of 1859 he commenced draining
it. But the greater part abounded
with springs, which did not afford a
sufficient quantity of water to form
a stream yet, moisture enough to
cause the decomposition of vast quanti-
ties of vegetable matter, which had
been accumulating for many years.
On the approach of the succeeding
spring and summer, the health,
which his family had usually en-
joyed, was supplanted by fevers

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of the most malignant character. The attending physician, who was remarkably ^{able} for his intelligence, immediately discovered their source, and advised the ^{g-} of the necessity of either draining it entirely, or filling his former drains. After many fruitless attempts to render it dry, he, although allowed the stream to assume its former ^{course}, and the health of his family was completely restored.

It is further to observe, that the continuance of the disease throughout the winter, is not an objection to its dependence on heat and moisture co-operating on vegetable matter. On this point it is, only necessary to observe, that the internal change produced by mi-



usually, often exist for a length of time, without exciting fever. Dr Chapman, speaking of the causes of Intermittent Fever, observes, that the length of time, after an exposure to it, before its effects are manifested is uncertain. I have known it to lie dormant for several weeks and even months.

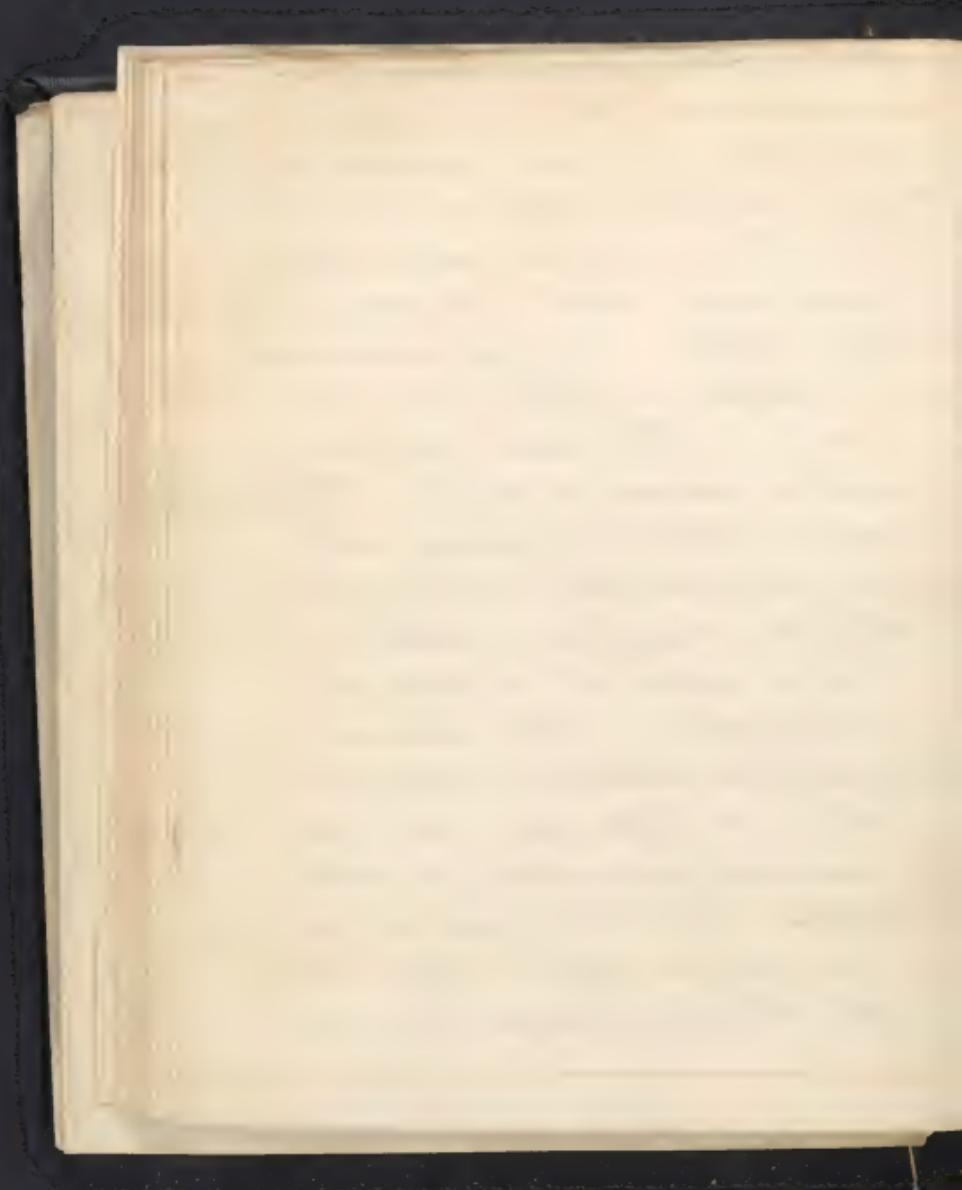
Diagnosis. The first stage was more liable to be confounded with Intermittent Fever, than any other disease. But by careful attention to the case, the distinction was sufficiently obvious. In Intermittents the apnoea is generally complete, leaving no disturbance of circulation. Though occasionally irregular, yet, in the most part, they take on either the type



in Smith's Case a Doctor who
had tried five, with the best success
the sweating stage was well marked.
The pulse is small & weak, and
small until the approach of the suc-
cessive chill. Neither the sweat nor any
other form of Intermittents was exhibited.

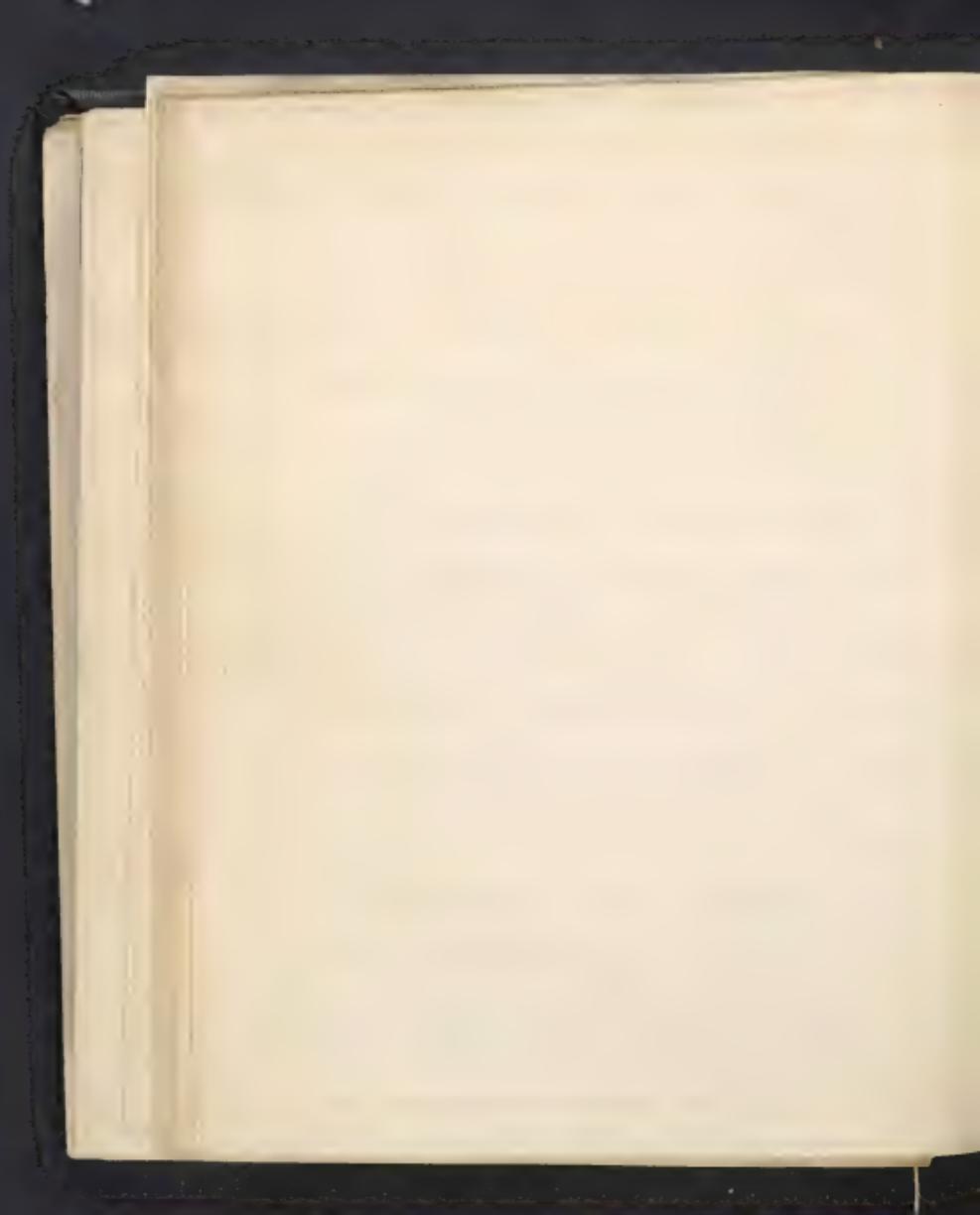
The second chill came on about the
seventh day, and was frequently follow-
ed by a third in a day or two. The
furred tongue, which is so common an
attendant of Intermittents, was absent.
In the second and third stages, it
was so clearly marked as not to be
mistaken.

Prognosis. The termination
of the disease was generally favor-
able, when the officiousness of pur-
ging did not change its character. Having



reached the second stage, its progress could not be arrested. Irritability of stomach, heavy stupor, low muttering with delirium, singultus, vomiting dark matter, coldness of the tongue and breath, imperfect respiration attended with heating of the shoul-
ders, humidity and inelasticity of skin, haggardness of countenance, insensibility of remedial agents, and the supine and extended position were unfavourable symptoms. On the other hand, abatement of the symptoms; equilibrium of temperature; return of warmth, subsidence of delirium, dejection of dark offensive matter, and ability to resume the curved position, were favourable.

Post Mortem. The mucous and

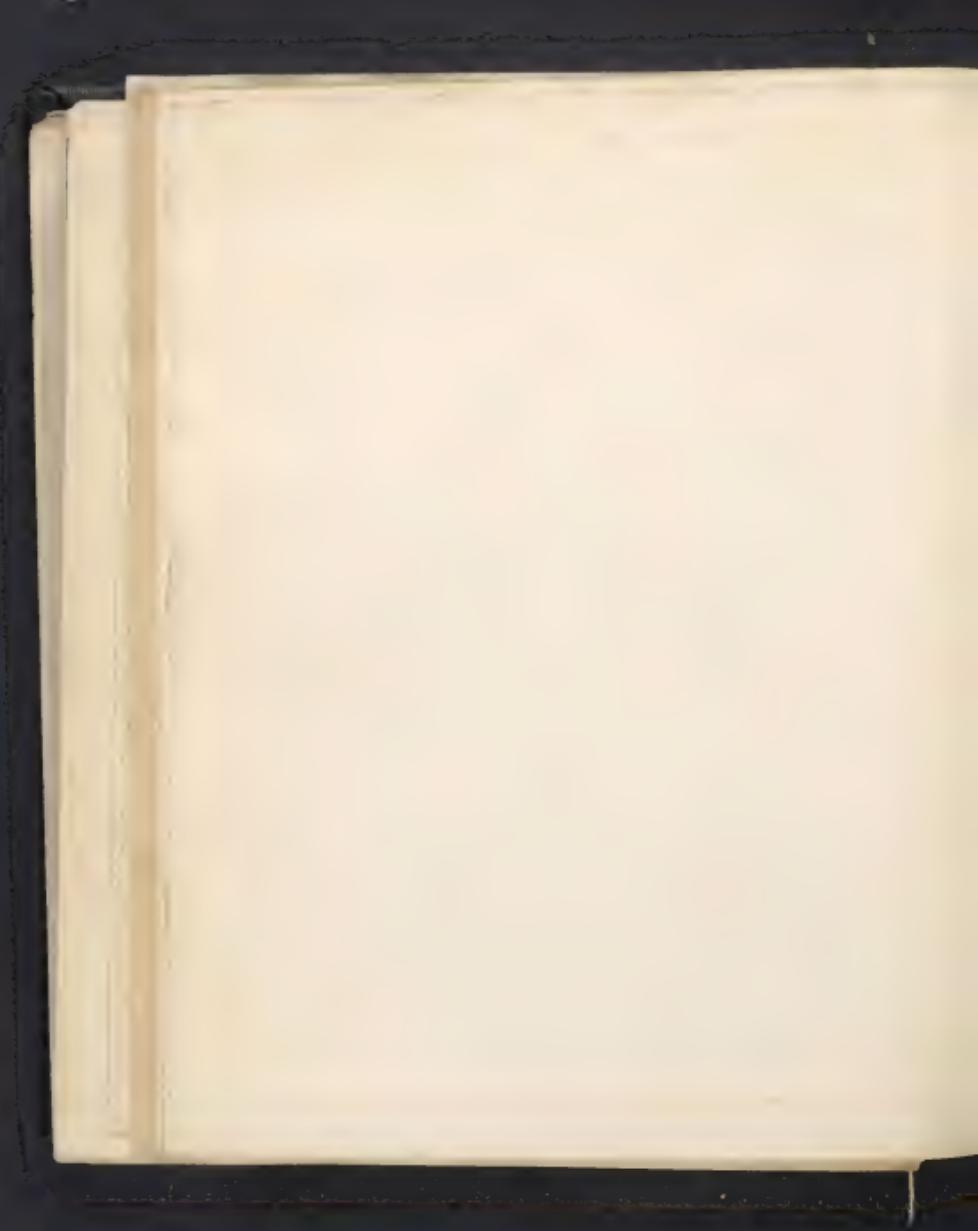


posterior walls of the stomach were inflamed, the latter chiefly about its curvatures. The viscera were phlegmatised, particularly the *omnibus minus*. The muscular coat was seldom diseased. The lungs often presented an unusual appearance. In their anterior part, in some cases considerable portions somewhat resembled the liver, both in appearance and weight. The liver and spleen were phlegmatised; the membranes on the posterior surface of the liver, particularly about the *hepaticus* *reticulus*, the cellular substance investing the hepatic duct, artery and *vena portarum*, were always more or less inflamed. Sometimes also the brain was congested, and the cranial membrane phlegmatised.



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Pathology reveals to us three
set of vessels mainly affected in
disease, viz. the arteries, veins and ca-
pillaries, of these the two first are
necessarily dependent; the last have
somewhat an independent action; they
are all, however, governed by the
same laws, and influenced by the
same causes, but in different degrees
according to their power of action,
or the irritability with which they
are endowed. We therefore find
that although all are affected, they
still suffer in different degrees: as an
instance, let us take the cold stage
of intermittent fever; here we find
the capillaries completely involved, the
veins sluggish and the arteries less af-
fected than all, the same condition



occurs in the disease of which I am
writing. Believing inasmata to be
the chief cause of this derangement
let us investigate its effects. If we
view its first impression on the sys-
tem, from the commencement of an
attack of fever to its most aggravated
form, we will find that it exerts
such a powerful influence as to pro-
duce a paralytic, if I may so term it,
of the blood-vessels, robbing them of
their power of action and reducing
that state of tension to which
exist in this disease. All the symp-
toms indicate this. What causes that
torpor and debility which subsists
in the disease, what causes that
sluggishness and inactivity in the ca-
rillaries, and the consequent coldness

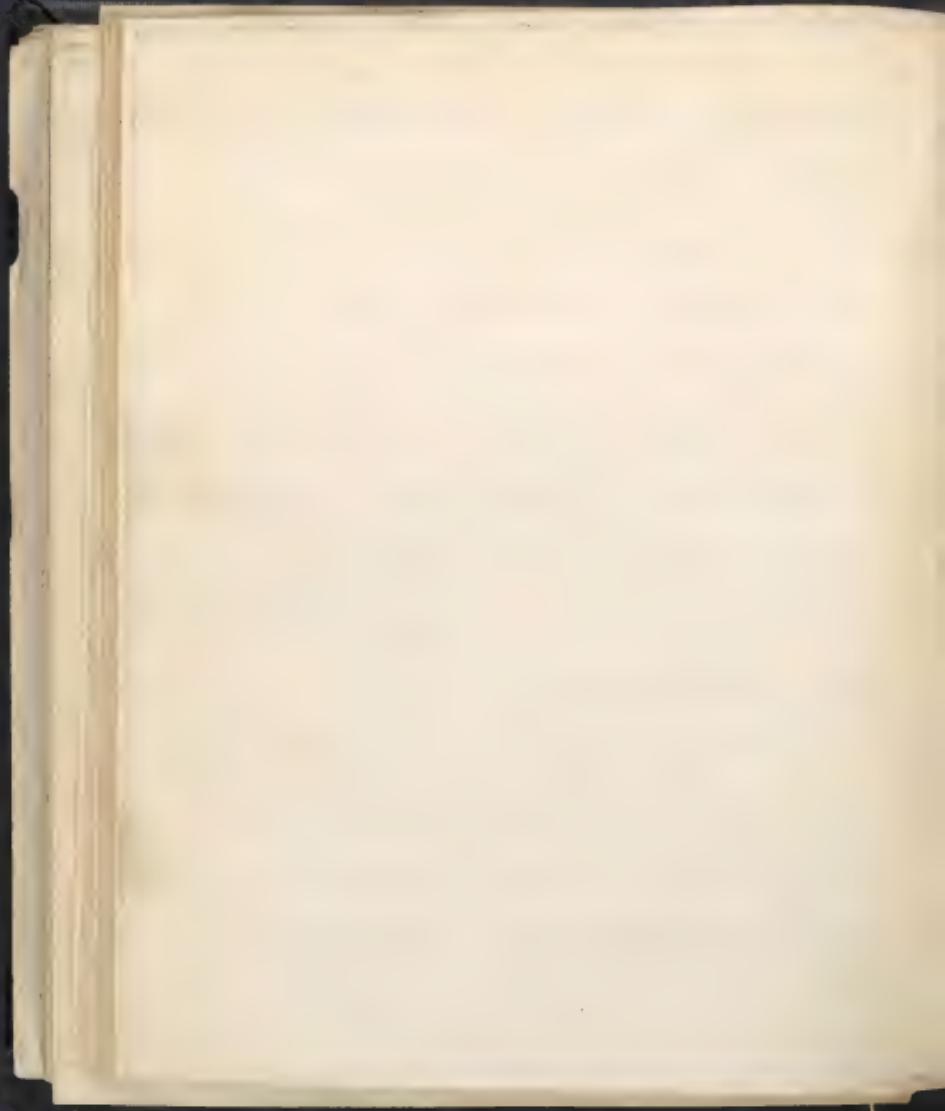
of the skin's fine canes that
particular state of the stomach which
post mortem examinations reveal.
The answer to all these is plain
and invariable. Enquide, an inveterate
and concentrated power of misfortune
invading the system in its most
pernicious part by various influence pa-
ralyzes the bloodvessels. The vis med-
icatrix nature of butler, or some in-
evitable cause endeavours to avenge
the system by exciting vascular action,
but stymied as it were, by the no-
tional attack, only one set of vessels
(the arteries) recover their action,
and these only mortally. The veins and
apertures, therefore, become the recepta-
ciles of blood, and that state of con-
gestion canes which I have noticed

and which, according to the laws of the animal economy, attaches those parts with the greatest force where the cause first acted. A loss of balance is therefore produced in vascular action, the system sinks under the impression, and the whole train of symptoms ensue.

Treatment. In the first stage, practitioners differed, as to the propriety of bloodletting, which arose chiefly from their confounding the oppressed with the weak pulse. Experience, however, proved that bleeding, even in large quantities produced the most salutary effects. I have seen twenty or twenty five ounces drawn at a single bleeding. Nor was a smaller quantity sufficient to make a decided impression on the system, unless several

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and to 40°, when it was altogether insufficient. A full bleeding was followed by a slower and fuller pulse; the capillary circulation immediately took on its healthy function, and the surface resumed its natural colour and warmth, evidently indicating the restoration of the lost balance of the circulation, which seemed to be the chief cause of the disease. After bleeding an emetic of distilled Sulphuric acid was given off it was administered previous to the abstraction of blood, the patient experienced pain in some one of the abdominal viscera; most frequently of the liver. When this occurred, the disease always proved obstinate. An emetic, however, given after bleeding, was found to be the most appropriate remedy. It was followed by the ejection of a large



quantity of bile, of a yellow or greenish cast; the capillaries were raised from their natural state, and the surface was covered with a gentle perspiration, leaving the patient in a languid state which generally terminated in sleep. In two or three hours after the administration of the emetic, twelve or fifteen grains of calomel was given, and to insure its operation it was followed by a larger spoonful of Castor Oil, which usually in four or five hours produced copious evacuations of dark and offensive matter from the bowels. This with a strict avoidance of exposure and improper diet, was all this stage required. All the cases taken in this stage and treated, as I have mentioned, readily gave way, and was fol-

lived by a speedy recovery. But when from neglect or mismanagement, the disease was suffered to run into the second stage it was impossible to check its course. Nature left to herself was far more efficient, than when interrupted by rash treatment. Contrary opinions, however, were entertained by some practitioners; and they accordingly set in upon the disease, in this stage, with a bold and precipitate hand, as though it was in the forming stage. They were, however, taught by sad experience (for twothirds of the unhappy patients subjected to such treatment died) that, after the disease had reached this stage, it was a mild and palliative treatment, alone, that was attended with success. It would be

easy to give, many interesting details on this point; which however, would be a digression from the narrow compass of an essay like this. I will, therefore, detail the treatment that fell under my observation, as well as the result, in as concise a manner as possible. The principal remedies relied on were: general and local bleeding, purgatives, diaphoretics, and vesicatories. Irritability of stomach, attended with a sensation of internal heat; tenderness of the epigastrium on pressure, a tongue foul in the centre and fluid at the tip and edges, excluded the use of emetics. Bleeding required great caution. The indications for its use were the corded pulse, difficulty of breathing, restlessness, and a dry skin. Under such

circumstances, it was followed by a removal of these symptoms, as well as a more equal distribution of blood.

The quantity taken was regulated by the effect produced, that is, it was drawn until a decided impression was made on the system. In most cases ten or twelve ounces induced a state approaching to synchopæ. Nor was a single bleeding sufficient; repetition was required, which was regulated by the effect produced, and the appearance of the blood taken. When it did not induce exhaustion and when the blood speedily coagulated into a firm mass, having the surface covered with a buffy coat, repetition was required. After general bleeding had been carried to a sufficient extent, cups were

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soft moderately, are the result of
congestion, followed by long dis-
tension.

Wring was of great utility, the
nitrous fumigation, was most beneficial
except in those cases, when the
biliary secretion was intermitting, or
when the contents of the bladder
could not be sufficiently retained
to act as a cathartic. In such
such circumstances Salol was given
the dose of two or three grains
repeated every two hours, until twelve
or twenty grains were taken, and
followed by a large infusion of castor
oil, which created freely flowing co-
lous discharges, at intervals and often
five minutes, from the bowels. Salol
was in the dose of ten or twelve

gains succeeded by an enema of castor oil, was also extremely beneficial. When it was required to keep the bowels in a soluble state the sulphate of soda in the dose of one or two grains with the addition of one sixth of a grain of tartar emetic repeated every two hours. This course was much used. Cold applications were also of great utility.

Sudorifics were administered after the system was perfectly reduced. Nitroa tartare in the dose of eight or ten grains with the addition of the tenth or twelfth of a grain of tartar emetic and combinations of Senna and Opium, were principally used. The former was given, when it was required

to keep the bowels in a soluble state, and at the same time to produce a slight action of the skin. To render diaphoresis more certain, warm pediluvium, or the vapour bath, was used at the same time. When there was restlessness and anxiety, which arose from mere irritability, the Specac Campi was generally given. While it allayed irritation, it produced a gentle diaphoresis. But at the same time, other symptoms demanded attention. When there were great determinations to the head, cups were applied to the temples, followed by cold applications; while at the same time the extremities were immersed in warm water. In severe cases, a blister was

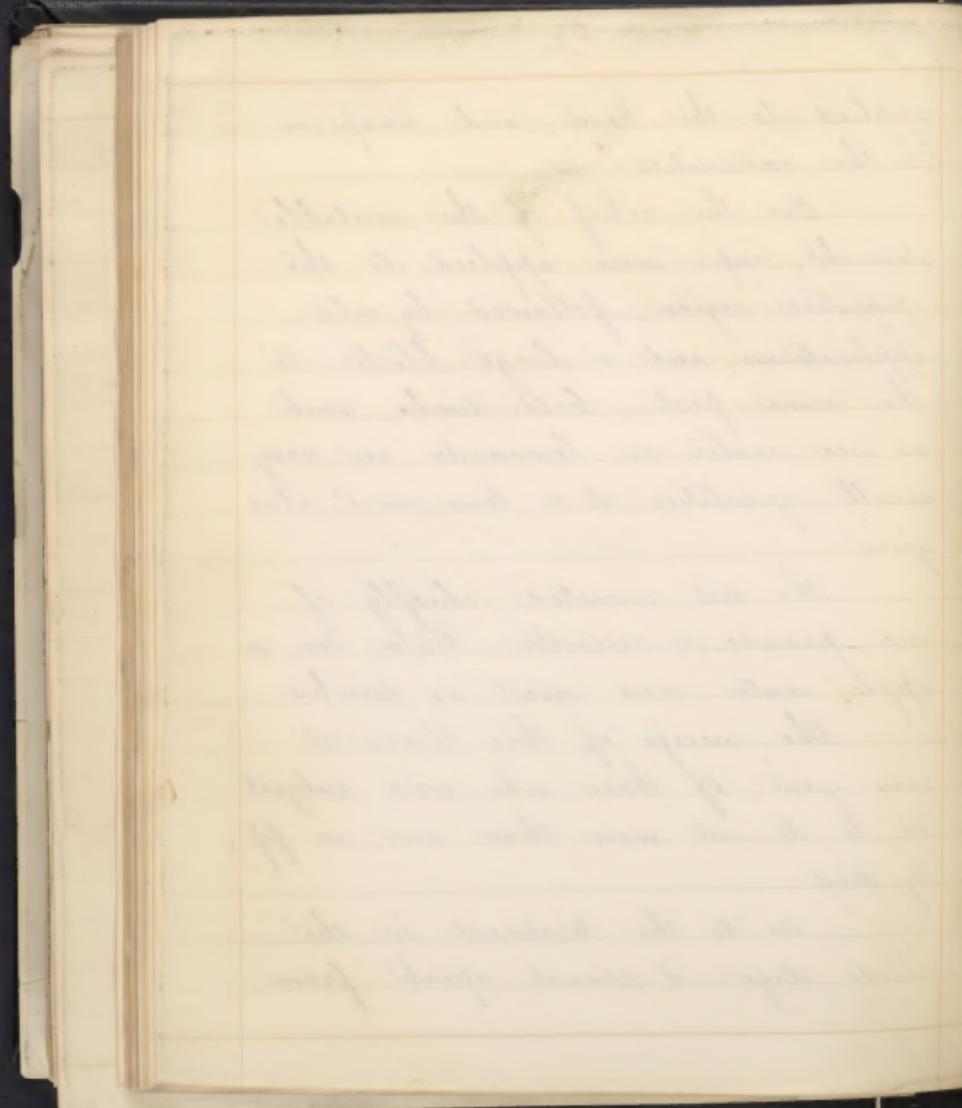
applied to the head, and sinapsis to the extremities.

For the relief of the irritable stomach, cups were applied to the epigastric region, followed by cold applications, and a large blister to the same part. Cold drinks, such as ice water or lemonade, in very small quantities at a time, were also given.

The diet consisted chiefly of rice, panado, or ricewater. Balm tea, or apple water was used as drinks.

The success of this treatment was great. Of those who were subjected to it, not more than one in fifty died.

As to the treatment in the third stage. I cannot speak from



experience. The indication was obviously to give strength to the system. The most appropriate remedies, were, Carbonate of ammonia, wine whey; infusion of bark alone, or conjoined with Serpentaria; sinapisms to the extremities, and a nourishing diet.

Finis

